Saskatchewan
Environment and
Public Safety
Fire Commissioner's
Branch

Fire Safety in Hospitals and Special-Care Homes

FIRE SAFETY in HOSPITALS and SPECIAL-CARE HOMES

PREPARED BY THE OFFICE OF

THE FIRE COMMISSIONER

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FOREWORD

In few instances are people so dependent upon the wisdom and foresight of administrative authorities as in the case of a hospital or special-care home. Not only does the illness or infirmity of the patients render them helpless in varying degrees, but this very helplessness imposes a responsibility on the staff to expose themselves to the same danger in emergencies.

How large is your institution? It may be a towering structure of steel, brick and stone or it may be a small frame building. To the occupant, each has an inherent disaster potential. The large busy fire resistive structure is still only as fire resistive as its contents. The safety of the occupants may be impaired by virtue of their very numbers. The small frame building is usually less heavily occupied and activities are less complex, however, the danger lies chiefly in the high degree of combustibility.

No hospital or special-care home can be completely safe from fire. Institutions for the care of the ill or infirm have inherited within their walls, fire hazards which are related to a great variety of occupations. The complexities of a modern hospital or special-care home involve the operation of factory-sized heating and power plants, machines and appliances and large commercial kitchens and laundries where flammable liquids or vapours are handled. These buildings can justly be compared to an arsenal as the daily use of oxygen and nitrous oxide represents the explosive power of a sizeable bomb. The hospital or special-care home also houses a great number of patients who are visited by a greater number of relatives and friends, many with dangerous, fire-causing habits. There may be a fire emergency in any hospital or special-care home at any time.

The protection of the sick and infirm against the ravages of fire or smoke is included in the responsibilities of the administrative authority. This responsibility can be met successfully only when the need has been acknowledged and when an advance plan of action has been formulated.

This manual is dedicated to that principle. The rest is up to you!

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TO THE ADMINISTRATOR

This manual has been prepared as a guide to provide information to permit the hospital or special-care home administrator to devise an emergency program applicable to the buildings for which he is responsible.

Each building must be taken on its own merits regarding the combustibility of the hospital or institution, its structure, height, occupancy, character of exits, communications, and the availability of outside assistance.

Every hospital or special-care home regardless of size or relative fire safety should have a *standing fire emergency program.* The program should be administered by one responsible person and it should be thoroughly understood by all personnel. See requirements of the Hospital Regulations under The Hospital Standards Act and Regulations under The Housing and Special-care Homes Act.

The object of a fire emergency program is to save lives. All planning must be geared to this concept. Because every hospital or special-care home cares for a large number of patients who cannot seek their own safety without help from others, the program must train personnel to be prepared at all times to protect patients incapable of seeking their own safety without a great deal of assistance.

In every fire emergency program, it is vital that the Administrator remember that the entire building is only lightly covered by personnel during the late evening and early morning hours. A program must be based on the number of people available during such times. It is essential that particular attention be given to emergencies during periods of excess patient population. Provision should be made for *additional help to respond immediately,* where at all possible.

The program should consist of a plan carefully designed to meet the existing conditions of each specific building. It should clearly instruct personnel on what to do in the event of fire. All employees new and temporary as well as the permanent, should be constantly alert as to what their specific duties are during a fire emergency. A systematic and *continuing course of periodic fire drills* is an essential part of the program.

Full protection requires:

1. *A regular inspection for fire hazards.*
2. *Adequate provisions of fire emergency equipment and correction of structural and fire safety deficiencies.*
3. *A continual check to insure all safety precautions are being followed. This could be done by the maintenance staff. An adequate system of reporting should be used to keep management informed.*

At all times, authorities should give prior consideration to the successful evacuation/relocation of patients in the event of fire. The term evacuation/relocation is commonly applied to the movement of patients in a fire emergency. This does not necessarily mean the emptying of the building, but rather, in some cases means the removal of patients from one area to another behind fire doors. Or, in a partially protected structure, it may mean the movement to temporary safety until final removal from the building is accomplished. In a well-protected building with fire walls it may mean removal to a different section of the floor area. This is known as *horizontal evacuation/relocation.*

Many institutions, particularly the smaller ones, are of frame construction and the degree of combustibility is the first of the controlling factors in developing an emergency program. For example, buildings with wood joists and stud construction are highly combustible and vulnerable to the rapid spread of fire. When fire breaks out in such a building, all activities must be turned immediately towards complete evacuation of patients. However, in a fire resistive building it may only be necessary to move patients from one section of the building to another where the sections are divided by fire walls to give them the required protection.

Even though the building is of fire resistive construction, protection must still be provided against the great volume of smoke and hot fumes liberated by a fire consuming flammable materials ordinarily found in hospital basements. The full significance of this warning about the *hazards of open stairways and open elevator shafts* can be appreciated only by a study of some recent hospital and hotel fire catastrophes.

Studies of these fires have shown that open shafts became, in an astonishingly few minutes, veritable chimneys carrying an enormous expansion of flaming gases. Temperatures of 1,500 degrees F. may be created with the result that all *combustible surfaces* close to these gases, *instantaneously burst into flame.* To make matters worse, the stairway has become a chimney sealed to the roof, thus the fire must vent itself through patients' rooms and windows to the outside of the building.

Protection against the spread of smoke is provided by enclosing all vertical openings with non-combustible or fire resistive enclosures. These vertical openings include stairways and elevators, dumbwaiters, linen chutes, waste chutes and even vertical shafts containing the various pipes leading up through the building.

The enclosures may not be sufficient to protect patients on a floor if the fire gains headway on that floor, of *if stairway doors are propped open* in the path of hot fumes released when an undetected fire suddenly breaks out. The emergency program, therefore, must be designed to cope with the movements of patients under such conditions on various floor levels.

CONDITION OF PATIENTS

Any emergency program should give specific instructions regarding the *handling of patients according to their physical condition.* In special-care homes and hospitals, many patients cannot move themselves. These include paralytics, immediate post operative patients, those critically ill or unconscious persons, patients immobilized with fractures, the aged and infirm, and infants, of course, who must have special care. Other patients may be unable to help themselves because of induced sleep, hysteria, or fire terror.

AVAILABLE MANPOWER

Manpower available during a fire at night must be assigned with great care. Nursing personnel on duty must remain in their own nursing unit. The rest of the personnel should be assigned to work as a fire brigade or at their own post depending on the urgency of the situation.

The program should give careful consideration to utilizing all personnel housed on the premises or nearby nurses' residence. This phase of the program must consider the length of time necessary to arouse off-duty personnel and the time necessary for off-duty personnel to arrive at the scene of the fire. These factors may be determined by fire drills and assignment of duties may be made accordingly. In determining priority of assignments, *the first requisite is life protection.*

To recall off-duty staff, a telephone "fan out" system must be in place. One or two calls may be necessary to initiate the "fan out". This should lead to the notification of all off-duty personnel. The "fan out" should be designed to notify those employees closest to the facility first. This will ensure the most immediate response.

AVAILABILITY OF OUTSIDE HELP

The emergency program must consider the availability of outside personnel. If the building is located in a large community with a well-developed full-time fire department, the administrator has to provide in the program, primarily for the short time between the discovery of the fire and the arrival of the fire department, when control passes from personnel to the fire department officer in charge.

In smaller communities with an active volunteer fire department, the administrator must be familiar with the resources of the volunteer fire company. The emergency program must consider the time required to save all patients by using both staff and fire department personnel.

SECTION 2:

HOW TO ORGANIZE YOUR PROGRAM

As soon as the administrator has analyzed the problems of life safety, he or she should *develop a written program.* He should not wait for completion of necessary structural changes or equipment installation. An initial program should DEAL IMMEDIATELY with the building in its current state to afford protection against existing hazards. It is assumed that where possible the analysis of fire vulnerability has been made with the advice of local fire chiefs or fire prevention departments, as advice from these sources is extremely helpful.

The successful handling of an emergency depends upon advance preplanning and training. The program should be simple but sufficiently thorough to cover all possibilities. To imagine all possible emergencies, the administrator may make observations at various parts of the building at different times of the day. The question should be asked, "What would the consequences be if a fire was in progress at this point, at this moment?"

INTRODUCTION

Since the program is to be studied by all personnel, it is common practice to devote the first part to general information and reminders.

INSTRUCTIONS UPON DISCOVERY OF FIRE

The written emergency program usually lists general instructions on what to do in case of fire. In general, these instructions should probably apply to three typical areas:

AREA A: Discovery of fire in a room occupied by a patient,

AREA B: Discovery of fire in a nursing unit or in an area not occupied by patients, and

AREA C: Discovery of fire in a non-patient room.

Area A:

Instructions should state that the person discovering the fire must (1) remove from immediate danger the patient occupying the room or the patient in immediate danger, (2) close the door to prevent the fire spreading in to the corridor, (3) give the alarm, (4) systematically close doors to all other occupied rooms, and (5) remove all patients from the fire zone.

As soon as the alarm has been given to the operator or the central office, all personnel on the nursing floor should be alerted, preferably by the nurse in charge of the floor. Subsequent instructions to the individual discovering the fire would depend largely on the situation existing in the danger area.

The individual discovering the fire may be ordered to assist with the removal of patients from the immediate danger area if the room may contain the fire until the building fire brigade is brought into action. If the building is extremely vulnerable to the spread of fire there may be a general order instructing all hands to assist with evacuation of patients. Again if the building itself is fairly fire resistive, but there is a likelihood that a fire occurring in a room can readily break into the corridor (as through a transom) the instructions may direct the individual discovering the fire to use a fire extinguisher providing that other personnel are available to remove patients from the threatened area. Because a small blaze is easiest to control, fire fighting with a hand extinguisher should take precedence over all activities except removal of patients from immediate danger and giving the alarm.

The activities of a fire department arriving at the scene of a fire are directed to:

1. Remove from danger all individuals threatened by the fire.
2. Take steps to extinguish the fire.

The priority of a life safety function should be kept in mind while evacuation procedures are drawn up.

Area B:

Instructions after discovery of a fire on a patient floor but not in a room where patients are in bed need not differ greatly from the foregoing, except that the first duty would be to close the corridor door and second to report the fire. Then, if the patients are not immediately in danger, efforts should be made to control the fire with a fire extinguisher.

Area C:

Procedures in other parts of the building will depend upon various factors influencing evacuation/relocation proceedings. For example, an area containing a high concentration of flammable materials in a building of combustible construction may need a special alarm which can be set off from within the area so the person discovering the fire can use a fire extinguisher without delay after sounding the fire alarm.

After instructions as to duties after discovery of a fire are drafted, they should be reviewed carefully to make sure that in each instance, specific instructions are given as to the *precise manner in which an alarm is to be turned in.* If a code is to be used for giving the location of a fire to the telephone operator, the exact details of the code should be included in these instructions, and these *instructions should be memorized.*

SPECIAL INSTRUCTIONS

The next part of the written emergency program usually covers *special instructions to specific personnel.* These instructions should:

1. Require nurses on duty to report to their respective nursing units for further orders.
2. Reinforce the necessity for keeping calm and giving calming reassurance to patients aware of the fire.
3. Train personnel to **close all doors** and windows (if the fire is at night lower window shades and turn on light).
4. Instructions for closing doors *should be specific.* Be sure that all stairway doors and smoke-proof partition doors — dividing one section of a corridor from another — and *all fire doors are firmly closed.*

All these rules should be included in department head instructions.

Except for patients immediately in danger, instructions should always specify that no patients are to be moved until definite orders are given. Removal instructions should include a *tallying process to account for all patients.* The orders should cover instructions prohibiting the use of telephones and elevators except as specifically authorized. Personnel off-duty should be instructed to report at once for regular duty *without changing into uniform.*

EMERGENCY CO-ORDINATOR

The program should call for a co-ordinator of emergency activities for all periods of the day. This responsibility may shift from one individual to another, but there must be someone designated within the institution at all times to be responsible for the direction of all emergency activities. Such direction, however, depends on open lines of communication. The program therefore, should clearly state the duties of the telephone operator since the telephone system is usually the backbone of intercommunication.

EVACUATION/RELOCATION

In a building highly vulnerable to fire, personnel will have to be explicitly trained in evacuation/relocation procedures to take place automatically when the fire breaks out. *Even two or three minutes* may make a difference between saving or losing lives in a fire.

Evacuation/relocation decisions should be delegated to the co-ordinator with the nursing supervisor on the floor, acting in his absence. In some cases, the order of evacuation could proceed as follows:

1. Those nearest to danger.
2. Ambulatory patients who should be wrapped in blankets and led to a place of safety.
3. Wheel chair patients who should be wrapped in blankets and wheeled to a place of safety.
4. Helpless patients who may be rolled in their beds, carried on their mattresses or rolled in the top bed covers and carried by persons grasping the blankets at the head and foot, with the last resort being to drag the patient wrapped in blankets.

It may be possible to move some patients to another part of the building on mattresses. If such transportation is indicated, all mattresses should be provided in advance with strong and well-attached carrying handles.

In situations of extreme hazards and extreme low staffing during the night, it may be necessary to specify a procedure whereby a patient is wrapped in a blanket and dragged to safety by personnel responsible for evacuation.

Another problem is the semi-ambulatory patient who can assist himself to some extent but is not strong enough to walk alone. The evacuation program should assign some personnel to assist such patients in a walking-carrying type of first aid procedure.

Finally, there are patients who can manipulate wheel chairs or walk by themselves but who must be given instruction as to procedures and carefully led by staff personnel to a place of safety. If patients are to be moved entirely from the building, consideration must be given to a place of refuge. As the emergency might occur in the middle of winter, houses or buildings in the immediate vicinity could be contacted and arrangements made to act as a receiving depot.

EVACUATION/RELOCATION IN FIRE RESISTIVE CONSTRUCTION

In modern fire resistant buildings equipped with smoke barriers, fire walls with fire doors, it is assumed that patients in their beds may be rolled away from the scene of the fire. The probable number of patients to be moved in bed for any given area should be calculated in developing the program. Determine whether the adjoining smoke free compartment will have sufficient space for all the beds as well as the wheel chairs containing stronger patients. It will also have to be determined if this action is going to block the exit to any fire escape.

Patients are moved primarily to protect them from smoke but also because the liberated heat may render the adjoining corridor impassable. For this reason, it is necessary that while the fire is contained within the room of its origin, patients beyond that point would be the first moved to safety. When the fire department has entered the room containing the fire, further evacuation to a lower floor may have to take place by the staircase.

EVACUATION/RELOCATION OF VISITORS

Evacuation of visitors should be planned with the same care given to patient movement. Usually the least confusion will result if visitors accompany patients during evacuation and are then directed to stairways after being assured of the patient's safety. It should be remembered that visitors will not be familiar with the building in all probability and will not know where the exits, fire escapes and staircases are located.

EVACUATION/RELOCATION OF NON-PATIENT AREA

The foregoing description of evacuation has been based on fire originating in nursing units, however, fires are more apt to occur in other areas of the hospital and the emergency program should give instruction for this type. Again, the vulnerability of the building to fire spread must be the basic

guide to the administrator. In the fire resistive building, with enclosed staircases, instructions for nursing personnel may be merely to *make certain that smoke barrier doors in corridors and all stairwell doors are tightly closed* with further orders that they go about their duties and maintain calmness among patients.

Discovery of a fire in the lower areas of a combustible type building may require instructions for either immediate preparations for evacuation or actual evacuation processes. This will depend largely on the physical protection in the areas in which fires may start. The protection of lives may require immediate steps to evacuate the entire building without delay when an alarm is given.

USE OF ELEVATORS

Disposition of elevators in any building will depend largely upon their number and location. The one universal rule is that *all normal elevator traffic is suspended during a fire alarm* in the building.

Elevators can never be considered acceptable exits or figure prominently in an evacuation plan since they depend upon continuity of electrical power which is frequently interrupted in a fire. Safe use of the elevator will depend upon the vulnerability of the entire building to fire spread. In a combustible building electrical cables serving the elevator may quickly become involved, making the elevator inoperable and possibly trapping the occupants between floors.

NOTIFYING THE FIRE DEPARTMENT

Only immediate lifesaving activities should take precedence over giving the alarm to the fire department.

In too many cases an attempt has been made in the past to fight the fire before notifying the fire department, with the result the fire has progressed rapidly and by the time the fire department has arrived, the building has been seriously involved. Regardless of the size of the fire, the fire department should be called immediately.

In the larger centres an alarm control box is often installed which is connected directly to the fire department. If such a box is not available, the instructions should provide for the operator to telephone the alarm to the fire department.

This person should know the location of the fire and should remain at the street box to guide the firemen to the scene of the fire.

Instructions should specify that the *alarm to the fire department must be given immediately by anyone without waiting for authority*, regardless of the apparent minor nature of the fire.

Next, the personnel alerting system should be put into action. Additional personnel to be alerted in case of fire should be listed with telephone numbers in the operator's instructions. If possible an employee should be stationed at the telephone within the area of the fire to receive instructions.

ALERTING SYSTEMS

Three types of alerting systems are related specifically to fire protection. The first is the *automatic fire detection system* which utilized thermostatic heat detection units or photo electric smoke detection units, spaced strategically throughout the building, that trigger an alarm in the event of

fire. This category also includes properly installed sprinkler systems which incorporate an integral water flow alarm sending feature.

The second type features an *electrically transmitted alarm* either general or coded, which may be set off by a person discovering a fire.

Smaller hospitals in Saskatchewan feature a general alarm network in which bells throughout the hospital ring continuously when activated from any one of strategically placed alarm sending stations.

Larger hospitals often use alarm sending stations which transmit a coded alarm, either visible or audible; with this system it is possible to determine immediately the specific section of the hospital from which the alarm is emanating. An additional advantage is that alarms with this system can more readily be limited to notification of the staff only, thereby eliminating anxiety of the patients.

The third type of fire communication system is the *personnel alerting system.* The simplest is the telephone or in the smaller buildings this may be a pre-arranged code given over the doctors' call system. In an institution of any size, particularly if it is more than one storey in height, it should be a separate system used for no other purpose. It should be so arranged that the call or alarm will give the approximate location of the fire. The emergency plan should specify the code to be used and should designate areas in which the alarm is sounded. Instructions to off-duty personnel should be included.

It cannot be emphasized too strongly the care that must be taken to eliminate the exercise of any judgment in giving the alarm, both to the hospital personnel and to the fire department. *Not one minute should be wasted between discovery of the fire and notification of the fire department* and all hospital personnel concerned.

This means that the person discovering the fire, the telephone operator, or anyone else concerned, should be authorized to give the alarm according to prescribed practice *without securing authority* from any source at the time.

It must be remembered that a visible fire may be only an external sign of a larger hidden smoldering fire ready to burst into intense flame. Whatever type of alarm system is used, it should always incorporate an extension to all detached buildings or staff residences where off-duty or other available personnel may be notified without delay.

DUTIES OF PERSONNEL

It is important to specify duties of all personnel in a fire emergency.

1. DUTIES OF CLERICAL HELP: Protection of cash, valuables and important hospital records must be planned in advance. The program should specify which records are to be placed in fire-proof vaults and safes. It must also specify which records in case of involvement of the entire building, will be required for immediate use (checking of casualties). The fire alarm should be the signal for *storing and locking all other valuable records into fire-proof vaults* or safes. Clerical help would largely be available during the daytime and should not be involved in key operations for an evacuation program.

2. DUTIES OF SERVICE HELP: Some institutions' fire regulations require laundry help to assemble available blankets and bathrobes and stand by for instructions as to where to deliver these materials or where to report for duties. A place of assembly should be designated for housekeeping and kitchen help and orders given to stand by for instructions.

   All personnel except those with a specific mission should be ordered to stay away from the scene of a fire. As with office help, the availability of personnel service is limited largely to the daylight hours and therefore they should not be counted on in developing the basic evacuation program.

3. DUTIES OF PROFESSIONAL AND CLINICAL PERSONNEL: In the case of hospitals, the emergency program must be so devised to permit uninterrupted continuation of surgical procedure to the greatest extent possible.

   Protection of surgery must begin with the hospital structure itself.

The operating rooms should be located in the most secure section of the building and all fire safety precautions necessary should be applied to keep the operating rooms particularly secure. Surgical procedures, obviously will have to continue after the fire alarm is given and emergency provisions should be made accordingly.

If oxygen or nitrous oxide are piped to the operating room, fire may immediately endanger that supply. Some specific individual should have the job of seeing that extra tanks of oxygen and nitrous oxide are always available for use in any emergency.

Additional personnel must be assigned to the operating room so that evacuation could be carried out under the direction of the surgeon if removal is ordered by the fire department. This would be necessary if the entire building or the operating theatre were in immediate danger. Provisions of the evacuation program in this respect should be discussed with the medical staff and written according to recommendations of the staff.

SECTION 3:

DEVELOPING YOUR EMERGENCY PROGRAM

Before putting an emergency program into final form you will find it extremely helpful to secure counsel of the various department heads whose activities will be involved. An excellent means of securing this co-operation is to provide copies of the tentative draft of the emergency program to department heads for study prior to a meeting.

PLANNING CONFERENCES

It will be necessary to call a planning conference of those selected as evacuation co-ordinators. They will review the tentative emergency program together. Those who attend should include a medical staff spokesman, a chief engineer, housekeeper, chief telephone operator and supervisory personnel.

Hospitals who employ personnel directors, safety directors or watchmen who will be involved in evacuation and fire fighting may include such individuals in this planning group. The knowledge these executives have of the building is invaluable for a realistic appraisal of the plan.

Planning meetings should also be attended by a representative from the fire department. He may be the department chief, a representative of the fire prevention bureau or the battalion chief for the district in which the hospital is located. In addition to the opportunity for securing advice from the fire department's representative, this meeting will permit exploration of what assistance the fire department will give in training the hospital fire brigade as well as the general personnel.

When the emergency program has finally been adopted in finished form, careful planning and promotion is recommended as the program goes into effect.

A meeting of all personnel should be called to clarify instructions pertaining to duties that will be required of each employee. It is sometimes necessary to hold two meetings to avoid interference with routine services. An announcement of the meeting should go to each employee together with a copy of the emergency program and request that the program be studied before attending the meeting.

The meeting should be arranged with a good deal of dignity and sense of importance. A venture is likely to be accepted at the face value placed on it by those most interested. Therefore, the initial fire instruction session will be most effective if apparent interest is displayed by those in authority. This meeting could be made more important by inviting a representative of the Board of Trustees, a representative of the Medical Staff and a local Fire Chief or some other designated officer of the fire department.

Group participation is also valuable in arousing general interest. It should be provided through a question and suggestion phase of the meeting to gain participation of employees who are inclined to be timid. Two or three questions and suggestions should be planted among the personnel other than the department heads.

EMPLOYEE TRAINING

The training procedure for employees of hospitals and special-care homes should include at least one annual meeting at which various procedures are demonstrated and at which time the use of fire extinguishers is demonstrated by the employees themselves. The *demonstration should be held under the direction of the fire department* and should involve the extinguishment of actual fires. A common practice is to call the meeting at the time of the annual re-charging of fire extinguishers which, among other obvious advantages also insures that each fire extinguisher is capable of effective operation.

The program should provide that the department heads shall be responsible for indoctrinating each new employee in the fire regulations of the building. In the case of floor nurses, a nurse supervisor should be required to make sure that each nurse is entirely familiar with procedures for giving a fire alarm, the avenues of evacuation on the floor in which she is stationed and the location of the fire extinguishers. This procedure should be followed when the students and nursing personnel are transferred to new departments or floors.

When regular safety meetings are conducted in the hospital or nursing home, it is good practice either to devote a part of each meeting to fire prevention and fire safety or to set aside every third meeting for this subject.

FIRE AND EXIT DRILLS

General Instructions:

Regularly conducted fire drills are essential to the success of the entire program. Fire drills should be called at various and unspecified hours of the day and night preferably, at least once a month and on a pre-arranged schedule that is faithfully maintained.

Fire drills should involve all personnel on duty but they should not involve the movement or handling of patients. This may be done by using a member of the staff as a patient. All off-duty personnel living on the premises should respond as they would in a natural fire. As soon as the alarm is sounded, all nursing personnel on patient floors should proceed immediately to re-assure all patients who may be concerned with the unusual activity when a fire drill is in progress. They should be assured that it is a regular practice and that there is no actual fire.

INSTRUCTIONS TO PATIENTS

Hospitals or institutions that issue printed instructions to patients with respect to the rules within the building should include a note explaining that monthly fire drills are held and if one occurs while he or she is a patient, the patient will be notified. It should state that drills are sometimes held at night. The notice can explain further that these drills are to provide protection for the patient in case of fire.

REALISM IN DRILLS

Actual fire conditions should be simulated in a drill. During the drill the simulated fire must occur in a specific location. The location should vary from one drill to another. It is essential also, that *employees become accustomed to the transportation of patients* in a simulated evacuation.

SAMPLE EMERGENCY PROGRAM

The following fire emergency program has been prepared only as a general guide to assist in the preparation of a sound but simple plan. Obviously, the smaller hospitals will not be staffed as completely as this sample suggests. Conversely, the larger hospitals should not use this sample verbatim, as additional inherent problems will exist and should be provided for in the program.

To make any emergency plan worthwhile, *All Personnel* must know and remember their responsibilities under the plan. The plan should, therefore, cover the duties of all personnel and yet be simple to the *individual.* To accomplish each requirement it is suggested that individual cards be prepared and posted in each department, which lists the *Introduction, General Instructions,* and the *Special Instructions* only for that department. In this way, as a constant reminder, personnel are more apt to remember this phase of their responsibilities in the institution.

I. INTRODUCTION

"....the protection of the sick and helpless against loss of life by fire or smoke is a responsibility of importance comparable to that of medical attention." — Building Exits Code, N.F.P.A.

1. AVOID PANIC: The greatest danger in most fires is PANIC. Don't alarm patients by excited motions. Never shout "Fire". Patients look to you for protection. Appear to be calm and move with assurance.

2. PREVENT FIRES: Good housekeeping is the best guarantee against fire. Do all you can to maintain order and cleanliness in the interest of fire protection. Make it a habit to watch for fire hazards.

3. MEMORIZE THE FIRE CALL NUMBER: The first few minutes after the discovery of a fire are more important that the next few hours. It is extremely important that no time is lost in searching for the proper emergency number. Speak in a calm and precise manner.

4. KNOW THE LOCATION OF FIRE EXTINGUISHERS IN YOUR AREA: Use the right extinguisher on the fire. Think over the instructions you have been given in the use of fire extinguishers.

5. KNOW YOUR DUTIES: In the event of fire, first evacuate any patient in immediate danger. Turn in the alarm. *Make sure that no smoke barrier doors, fire doors or stairway doors have been propped open.* Close all windows throughout the area. Attempt to isolate a fire to as small an area as possible.

II. EVACUATION INSTRUCTIONS

Except for moving patients in immediate danger, the co-ordinator in charge during a fire emergency will give the order for either partial or complete evacuation/relocation.

1. ORDER OF EVACUATION: This should be determined according to patient's physical condition.

   (a) AMBULATORY: Group them and appoint a helper to lead them to safest part of same floor (towards an exit). Leave in charge of a competent person who may direct them if they must leave the floor.

   (b) WHEEL CHAIR CASES: Use wheel chairs to remove them to a safe place on the same level. Take chairs back for additional patients. Others can help by taking them out later.

   (c) STRETCHER AND HELPLESS CASES: Surgical and medical patients — some may be able to walk with support towards safer part of building. If helpless, roll patient in blanket and drag along the floor by holding corner of blanket.

   Those nearest to danger will be evacuated first.

   Newborn babies are the most helpless patients. At the first sign of danger they should be removed to a place of safety.

   Incubator babies should be kept in nursery as long as possible. Take along small emergency oxygen tank if oxygen is being used. Have a nurse stay with the babies at all times.

   Delivery room and operating room patients should be removed upon direction of the doctor in charge.

2. PARTIAL EVACUATION: This means moving your patients to a neighboring area. This may be the other end of the same floor (on the other side of a firewall); or it may be to a lower floor.

   In buildings without firewalls, initial movement of patients to areas beyond smoke barriers may be utilized to gain time, with evacuation continuing from there to a lower floor or outside. *Do not use elevators except as a last resort.*

III. GENERAL INSTRUCTIONS

If Fire is in an Occupied Patient Area:

1. Remove patients and close doors and windows to restrict spread of smoke or fire and to reduce drafts.
2. Sound the building fire alarm.
3. Notify telephone operator and/or the Fire Department.
4. Only *after steps 1, 2 and 3* have been completed, use the nearest *suitable* fire extinguisher on the fire until additional help arrives.
5. Assist in reassuring patients and preparing them for evacuation if fire is in your area and you are not directly involved in steps 1 to 4.

   Close all windows and close all doors in corridors and stairways, elevators, dumb waiter and laundry shafts. Remove obstructions in corridors and exits. Regulations under The Hospital Standards Act, Section 100 states all aisles and corridors shall be completely free of all obstructions such as beds, hospital appliances, cabinets and hospital equipment generally.

If Fire is Not in Your Area:

1. Proceed to or stay in your normal working area and begin duties assigned specifically to you in this emergency plan.
   - Close all doors and windows on the way.
   - DO NOT cause panic by shouting or moving about excitedly.
   - DO NOT use the telephone or intercom system unless absolutely necessary.
   - Leave lines of communication open for the emergency co-ordinator.
   - DO NOT USE AN ELEVATOR unless specifically ordered to do so.

IV. SPECIAL PERSONNEL INSTRUCTIONS

Emergency Co-ordinator

1. Know the building with regard to what fire safety features are incorporated or lacking.
2. Use this knowledge in deciding what degree of evacuation will be necessary in any given emergency situation.
3. Employ personnel according to their responsibilities, to establish and maintain an efficient and orderly working force.
4. Be sure that key personnel are carrying out their designated duties as prescribed by this plan.
5. Keep all departments notified as to the progress of the fire so that either additional preparations can be made or patients can be re-assured that the fire is of minor importance.

Switchboard Operator

1. On receiving a report of fire, regardless of severity, *call the Fire Department, giving the exact location.* If lines are dead, have a runner pull the nearest street alarm box and remain there to direct firemen.
2. Sound the local alarm system if it is not already operating, or
3. Use the call system, repeating the code for fire and the exact location, several times.
4. Send runners to notify those departments or individuals who cannot be alerted with the call system or by telephone. *Those to be called include:*
   (a) The Co-ordinator
   (b) The Superintendent or Second-in-Command
   (c) The Engineer in Charge
   (d) Nurses' Residence
   (e) Laundry
   (f) Power House
5. Remain at your station for instructions from the co-ordinator. Keep communication lines as free as possible for the use of the co-ordinator.
6. When fire is out notify all personnel by using code word.

Office Staff

1. Stand by to receive instructions from the Co-ordinator and to act as runners when required.
2. Place cash and important records and documents in the vault or safe *or* prepare to move them from the building.
3. Keep the patient list ready for reference in checking casualties or patient location.

Engineer

If Fire Is in Your Area:

1. Turn in the alarm.
2. Close all windows and doors.
3. Turn off ventilating system if system runs through this area, and any other machinery involved in fire.
4. Attempt to extinguish fire with nearest available fire extinguisher.

If Fire is Not in Your Area:

1. Shut off ventilating system in building.
2. Shut all windows and doors.
3. Locate the seat and extent of fire, if possible, before arrival of firemen.
4. Attempt to extinguish the fire.
5. Stand by to cut off electrical circuits, gas lines, etc. at request of Fire Chief. Insure that all emergency lights continue to function.

Nursing Staff

If Fire is in Your Ward, Head Nurse Will:

1. Assure that patients in immediate danger have been removed.
2. Insure that alarm has been turned in.
3. Insure that windows, doors and transoms have been closed.
4. Direct fire fighting efforts until arrival of supervisor or firemen.

If Fire is Not in Your Ward, Head Nurse Will:

1. Go to or stay in her ward and await instructions.
2. Direct nurses and aides to prepare for possible evacuation.
3. Assign a nurse to stay with the incubator babies at all times.
4. Insure that all doors, windows and transoms are closed.
5. Keep the patient list at hand to insure that all are accounted for.

Nurses, Nurses' Aides, Orderlies and Maids Will:

1. Follow the rules under General Instructions.
2. Stand by and await further instructions.

Off-Duty Personnel Will:

1. Report immediately to person in charge on first floor, taking a warm sweater, coat or blanket with them.
2. Close all doors, windows, transoms, etc. along the way.

X-ray, Laboratory Staff

1. Follow applicable rules under General Instructions.
2. Turn off all gas and electrical machinery.
3. Close all doors, windows and transoms.
4. Report to Co-ordinator for instructions.

Laundry, Sewing and Linen Room

1. Follow applicable rules under General Instructions.
2. Turn off all gas and electrical machinery.
3. Close all doors, windows, transoms and laundry chute doors.
4. Gather robes, blankets, sheets, etc. and stand by for instructions from the Co-ordinator.

Kitchen Staff

1. Follow applicable rules under General Instructions.
2. Turn off all gas and electrical machinery, including ventilating fans.
3. Close all doors, windows, and dumbwaiter doors.
4. Stand by for further instructions from Co-ordinator.

Stores Staff

1. Follow applicable rules under General Instructions.
2. Remove all stocks of ether or other flammable liquids or gases from buildings.
3. Close all doors, windows and transoms.
4. Stand by for further instructions from Co-ordinator.

Operating Room Staff

1. Follow applicable rules under General Instructions.
2. Assure that alternate methods of resuscitation and aspiration are available if supply and suction lines are cut off by the fire.
3. Close all doors and windows to keep out smoke, fumes, dust, etc. to permit the greatest possible extent of uninterrupted surgical procedures.
4. Prepare to evacuate patients under the direction of the surgeon in charge, if evacuation is ordered.

Housemother

1. Follow applicable rules under General Instructions.
2. Arouse all sleeping-in employees and advise them to report for duty.
3. Prepare to receive evacuated patients in the residence.

Grounds Keeper or Janitor

1. Follow applicable rules under General Instructions.
2. Check exits and exit corridors to insure that they are free of obstructions.
3. Check driveways, fire escapes and exits to ensure that no vehicles have been parked in these areas.
4. Stand by to direct firemen to area of fire and to receive further instructions.

SAFETY IN HANDLING COMPRESSED MEDICAL GASES

Authorities in the field of hospital safety agree that safety in the handling of compressed medical gases can be realized only if personnel follow three basic rules.

1. Be well indoctrinated in the accepted rules regarding the safe handling of medical gases.
2. Be familiar with the characteristics of individual gases which make it important to follow safety rules.
3. Be safety conscious at all times when handling gases.

The importance of the above prerequisites to safety in handling medical gases cannot be over-emphasized. A sound hospital safety program should be directed towards development of all three of these prerequisites because true safety is based on understanding and full understanding leaves no question unanswered. This section will attempt to give the accepted rules for handling compressed medical gases and description of the characteristics of these gases which make these rules important.

CLASSIFICATION OF GASES

The chief hazards in using various medical gases vary greatly with the type of reaction caused by each gas. It is advisable to group them as follows:

(a) non-flammable gases which support combustion,
(b) flammable gases, and
(c) non-flammable inert gases.

The non-flammable gases which support combustion are oxygen and nitrous oxide, flammable gases are cyclo propane and ethylene. The non-flammable inert gases are helium, carbon dioxide and nitrogen. It should be pointed out here that for safety purposes carbon dioxide is classed as inert but is toxic in high concentration and pure helium or nitrogen will cause asphyxiation. Only oxygen in sufficient quantity will support life.

OXYGEN AND NITROUS OXIDE

Oxygen and nitrous oxide will not burn or explode, however, they will support combustion vigorously. Materials which burn in air (air being composed essentially of 20% oxygen and 80% nitrogen) are extremely more flammable in atmospheres of oxygen or nitrous oxide.

Material not commonly thought of as capable of burning may often burn in an atmosphere of oxygen or nitrous oxide, and very rapidly. A piece of flammable material such as wood will not burn in air, nitrous oxide or oxygen unless it is first elevated to a temperature at which burning will commence.

A piece of wood can be raised to its ignition temperature in an inert atmosphere such as carbon dioxide or nitrogen and burning will not occur. A stream of oxygen or nitrous oxide cannot be ignited by a match although it will make the match burn much more violently than in air.

The primary safety precaution with oxygen and nitrous oxide equipment is to keep away flammable material such as oil, grease, soap or lint. The next most important precaution is to *open cylinder valves slowly*. When a regulator is attached to an oxygen cylinder and the cylinder valve is opened rapidly, the gas in the regulator is quickly compressed to cylinder pressure and hence heated. If flammable material is present and if the temperature rises sufficiently burning will result.

CYCLO PROPANE AND ETHYLENE

Cyclo propane and ethylene are both flammable gases. They are not explosive and may be handled without fear of explosion except when mixed in certain proportions with air, oxygen or nitrous oxide.

Any of the anaesthetics are apt to be present in explosive concentrations during usual anaesthesia procedures. In general, they will diffuse rapidly into air so that explosive mixtures are not likely to occur more than a foot or so away from the anesthetic equipment or patient's mouth. Ether, on the other hand is much more dense and will tend to remain in explosive concentrations, particularly near an accumulation of liquid ether.

CARBON DIOXIDE AND HELIUM

Carbon dioxide and helium are inert gases and therefore require no precautions in handling except against asphyxiation, other than the general rules applying for any high pressure compressed gas.

Compressed carbon dioxide is widely used as a fire extinguishing agent. The sudden release of the gas to atmospheric pressure causes snow to form which both cools the surface to which it is applied and smothers the blaze by excluding oxygen.

GENERAL RULES FOR HANDLING MEDICAL GASES

1. Never permit oil, grease, or other readily combustible substance to come in contact with cylinders, valves, regulators, gauges, hoses and fittings. Oil and certain gases such as oxygen or nitrous oxide may combine with explosive violence.
2. Never lubricate valves, regulators, gauges or fittings with oil or any other combustible substance.
3. Never handle cylinders or apparatus with oily hands or oily gloves.
4. Connections to piping, regulator, and other appliances should always be kept tight to prevent leakage. Where hose is used, it should be kept in good condition.
5. Never use an open flame to detect gas. *Use soapy water.*
6. Never interchange regulators or other appliances used with one gas, with similar equipment intended for use with other gases.
7. *Fully* open the cylinder valve when cylinder is in use.

8. Do not deface or remove any markings which are used for identification of contents of cylinder. This applies to labels, decals, tags, stenciled marks and upper half of shipping tag. Cylinders should not be refilled using label of previous filling.
9. No part of any cylinder containing a compressed gas should ever be subjected to a temperature above 125 degrees F. A direct flame should never be permitted to come into contact with any part of a compressed gas cylinder.
10. Never tamper with the safety devises in valves or cylinders.
11. Never use cylinders for any purpose other than to contain gas.
12. Cylinder valves should be *closed* at all times except when gas is actually being used.
13. Do not place cylinders where they might become part of an electric circuit.
14. Compressed gases should be handled only by experienced and properly trained persons.

(General precautions for handling compressed gases are published in a pamphlet entitled, "Safe Handling of Compressed Gases" obtainable for a small fee from: Compressed Gas Association Incorporation, New York, New York.)

MOVING CYLINDERS

1. Where caps are provided for valve protection, such caps should be kept on cylinders when cylinders are being moved.
2. Never drop cylinders or permit them to strike each other violently.
3. Avoid dragging or sliding cylinders. It is safer to move large cylinders even short distances by using a suitable truck, making sure that the cylinder retaining chain or strap is fastened in place.

STORING CYLINDERS

1. Cylinders should be stored in a definitely assigned location.
2. Storage rooms should be dry, cool, and well ventilated.
   (a) Where practical, storage rooms should be fire resistant.
   (b) Storage in sub-surface locations should be avoided.
   (c) Storage conditions should comply with local and provincial regulations.
   (d) Reserve stocks of cylinders containing flammable gases should not be stored in the same room as those containing oxygen or nitrous oxide, however, it is good practice to include cylinders containing the carbon dioxide in storage rooms with those containing flammable gases since carbon dioxide is, in itself, a fire extinguisher.
3. Cylinders should never be stored in the operating room other than those for actual use.
4. Large cylinders should be placed against a wall to offer some protection against being knocked over, and should not be placed along an aisle used for trucking traffic. The best practice is to provide some means for a chain fastening of large cylinders to the wall.

5. Cylinders may be stored in the open but in such cases should be protected against extremes of weather and from the ground beneath to prevent rusting. During winter, cylinders stored in the open should be screened against continuous direct rays of the sun.
6. Never store cylinders where oil, grease, or other readily combustible substance may come in contact with them. Oil and certain gases such as oxygen or nitrous oxide may combine with explosive violence.
7. Valves should be kept closed on empty cylinders at all times.

USE OF ETHER WITH MEDICAL GASES

While ether is not a product of the medical gas industry, it is used so much in common with medical gases that recognition of its hazards is important.

Ether is highly volatile liquid, giving off, even at comparatively low temperatures, vapors which when combined with air or oxygen, form flammable and explosive mixtures. The vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back.

Spontaneously explosive peroxides sometimes form, on long standing or exposure in bottles to sunlight. In order to prevent these peroxides from forming in an anaesthesia machine, the ether vaporizer wicks should be rinsed and dried after each day's use and the residual ether in the vaporizer jar should be discarded and the jar thoroughly cleaned before replacing on the machine.

In storing containers of ether they should be safe-guarded against mechanical injury and kept in unheated compartments away from sunlight and any source of ignition. When used in connection with nitrous oxide or oxygen in anaesthesia, care must be taken to avoid exhausting the gas cylinders completely to prevent the possibility of ether being drawn back into the cylinder.

SECTION 5:

SAFETY IN THE OPERATING ROOM

This section will be limited to the safe handling of flammable anaesthesia vapors and gases in the operating room. In the previous section, the explosive mixtures of ethylene and ether or cyclo propane etc. with air, oxygen or nitrous oxide were discussed and it was pointed out that in any routine inhalation anaesthesia, explosive mixtures will be employed. It can be used safely if proper precautions are taken as none of these gases or mixtures will explode spontaneously.

There are many ways in which a flammable mixture can be ignited. Some of these are obvious and the means of eliminating the hazard is easily recognized. Other causes of ignition are not always fully understood, and full protection against these hazards is often not followed.

IGNITION SOURCES

The more common and obvious hazards of ignition are open flames, smoking, use of live cauteries, or diathermies, faulty electrical wiring and sparking electrical equipment. It is simple to guard against these hazards. Open flames, smoking and faulty electrical wiring should never be permitted in the hospital operating area.

When it is necessary to use live cauteries, diathermies, or other non-explosion-proof electrical equipment, experience has shown that safety can be assured if a non-flammable type of anaesthesia is administered such as nitrous oxide oxygen.

With conventional plugs, light switches, etc. sparking may occur readily. The National Fire Protection Association, the American Insurance Association, and other Codes state that electrical wiring, fixed equipment installed less than five feet above the floor, and portable equipment, should be explosion proof which is in accordance with requirements of the Canadian Electrical Code.

Striking steel against steel or other hard materials can produce sparks powerful enough to ignite anaesthesia mixtures, so care must be taken in using steel instruments or furniture in the operating room. Aluminum, brass, or copper do not produce this hazard. Shoes having iron or steel nails should not be worn in the operating room.

STATIC ELECTRICITY

Perhaps the most common source of ignition of flammable anesthetic mixtures is static electricity. The reason for this is twofold. First, the hazard is often not adequately recognized and reasonable precautions are not taken and secondly, if only limited precautions are taken, sufficient static to ignite mixtures may still be developed.

A great deal of work has been done on eliminating the hazards of static electricity and educating hospital personnel in static hazards and methods of eliminating them. The hazard can only be removed by rigid enforcement of a large number of precautions.

In general, while only a few precautions will obviously not guarantee safety, each precaution will probably reduce the hazard greatly and may be thought of as a successful step towards safety.

The relative importance of these precautions is not known generally and a list of them in probable order of importance is as follows.

1. **Elimination of Static Producing Materials From the Operating Room:**

   Static charges will usually be produced by any separation or rubbing of any material such as cloth, rubber, paint, etc. which will not conduct electricity.

   Because almost all clothing, etc. now in use will produce static to some degree, electro-static hazards will be produced. For example, squirming on a rubber seat pad or walking in wool pants will frequently produce sparks strong enough to ignite flammable gas mixtures.

2. **Garments, Sheeting, Etc.:**

   While all non-conductive materials are capable of producing static, some are usually far worse than others.

   In particular, wool, silk, nylon, rayon, and fabrics containing quantities of these fibers are likely to produce static to a far greater degree than cotton or linen. Therefore, garments, blankets, sheeting, mattress covers, etc. of wool, silk, nylon, rayon, non-conductive rubber, vinylite or other plastics should not be permitted in the hospital operating room.

   A cover of fabric or any other sheeting should never be used on anaesthesia equipment, since it may confine gas, which might leak from a cylinder, and ignite it with the static produced when the cover is removed.

3. **Rubber:**

   Particularly in sponge form, rubber is also a strong producer of static electricity and should be eliminated or procured in conductive form wherever possible.

   Leather is quite variable and in some cases will have appreciable conductivity and inability to produce static, particularly if damp. However, shoes with conductive rubber soles are available and should be used always, since they will not produce static even if dry.

4. **Humidity:**
It was once thought that maintaining a relative humidity in the operating room greater than 75 per cent would totally eliminate the static hazard.

It was known that with the addition of moisture in the air, the generation of static electricity becomes more difficult. However, flammable anaesthetic mixtures have been ignited by static electricity when the relative humidity in the operating room was known to be in excess of 70 per cent.

Thus, experience has shown that, while high relative humidities will tend to reduce the static hazard, humidity alone cannot be depended upon to eliminate the hazard.

5. **Conductive Flooring:**
Refer to Section 67, (1), (2), (3), (4), (5) in the Regulations under The Hospital Standards Act.

Many forms of solidly conductive flooring are now on the market, containing compounds such as acetylene carbon black or magnesium oxychloride.

Before the advent of these conducting additives, terrazzo floors with metal grids embedded in them, were used to some extent. This type of floor may not be conductive throughout, and equipment and personnel in the room may not always be in contact with the conductive paths formed by the grid. In addition, there may be electric shock hazard with this type of flooring.

Particular care should be followed in maintaining conductive floors, as the use of some polishes and soaps on conductive flooring may render them less conductive or totally non-conductive as regards the personnel and equipment in the room. Some authorities recommend that non-conductive floors be treated frequently with calcium chloride solutions to provide a damp, conductive layer.

There are a number of reprinted articles concerning hazards and precautions in using anaesthesia which are available free of charge by writing the Ohio Chemical and Surgical Equipment Co., a division of Air Reduction Company, Inc., 1400 East Washington Avenue, Madison 10, Wisconsin. Ask for reprint by catalogue number and title. Some of these are as follows:

Catalogue number 143 with the title of: "Lessening Anaesthesia Hazards", by John H. Hayes, Lennox Hill Hospital, New York City.

Catalogue number 180, "Progress in Prevention of Anaesthetic Explosions", by Warren P. Morrill, Chicago, Ill.

Catalogue number 203, "Hazards of Fire and Explosion of Anaesthetic Agents", by Barnett A. Greene, M.D., Philadelphia.

Catalogue number 204, "Hazards of Fire and Explosion of Anaesthetic Agents", by Barnett A. Greene, M.D., Brooklyn, New York.

SECTION 6:

FIRST AID FIRE APPLIANCES

STANDPIPES

All hospitals and special-care homes of new construction should be provided with inside standpipes. The number required will depend on the extent and layout of the building. They should be so located as to serve all parts of the building adequately. In a small building of moderate height in which there is no serious exposure, 2-inch pipes may be sufficient for first aid requirements, however, in larger buildings, a larger standpipe may be required.

Standpipes should extend from the basement through all floors and be connected to a street water main or suitable pressure or gravity tank. They should have a 1½-inch hose connection and gate valve on each floor not over 5 feet above the floor.

Approved standpipe hose, not in excess of 75 feet should be attached to each outlet and each length of hose should be equipped with a nozzle having a ½-inch outlet or the equivalent.

FIRE EXTINGUISHERS

Various types of fire extinguishers are mentioned here and each type is of value but all are not equally effective on various kinds of fires. On this account, consideration should be given to the class of fire which may occur depending upon the nature of the processes or contents of the building.

It should be understood that portable fire extinguishers are designed to cope with fires in their incipient stage and are considered necessary even though the property is equipped with standpipes and hose or even automatic sprinklers.

In locations where extinguishers are likely to be obscured by furniture, storage or construction features, etc., or in a large room, means should be provided to indicate conspicuously the presence of the extinguisher.

Extinguishers should be hung on hangars or set on brackets or shelves so that the top of the extinguisher is no more than 5 feet above the floor. Larger extinguishers, in the five gallon or over ten pound sizes, should not exceed 3½ feet.

CLASSIFICATION OF PORTABLE FIRE EXTINGUISHERS

For all practical purposes, there are three general classes of fires:

(a) CLASS A FIRES: Defined as fires in ordinary *combustible material such as wood,* cloth and paper where the quenching, cooling effect of quantities of water or solutions containing large percentages of water is most effective in reducing the temperature of the burning material below the ignition temperature.

(b) CLASS B FIRES: Defined as fires in *flammable petroleum products* or other flammable liquids, greases, etc. where the blanketing, smothering effect of an oxygen excluding media is most effective.

(c) CLASS C FIRES: Defined as fires involving *electrical equipment* where the electrical non-conductivity of the extinguishing media is of first importance.

Based on the preceding classifications of fires and also upon established fire extinguishment potentials, ratings have been established for portable fire extinguishers. These ratings consist of a number and a letter; or a combination thereof, and appear on the approval label affixed to the extinguisher. The number indicates the fire extinguishing potential of that type and size of extinguisher and is important to fire protection authorities in evaluating extinguisher requirements for any given risk.

The letter or letters refer to the class or classes of fire on which the extinguisher is most effective.

Personnel should study the letter designations of the various extinguishers in advance to help insure that the proper extinguisher will be used in any given fire.

OPERATION AND MAINTENANCE

Responsibility for inspection and maintenance of fire extinguishers should be assigned to a member of the staff. Fire extinguishers to be maintained in a fully charged and operable condition, be kept in their designated places at all times when they are not being used, and should be inspected and maintained in accordance with the manufacturer's instructions appearing on the extinguisher. Extinguishers should be conspicuously located where they will be readily accessible and immediately available in event of fire. Extinguishers should not be obstructed from view. Extinguishers not in hose cabinets to be hung on the wall and top of the extinguisher should not be higher than five (5) feet from the floor. (For Special-care Homes, refer to Part II, Section 12 of the Regulations under the The Housing and Special-care Homes Act).

It can safely be said that the majority of personnel employed in hospitals and institutions do not have adequate knowledge of all fire extinguishers beforehand, to operate one effectively during an emergency.

It can also be said that a great many fire extinguishers located in hospitals and institutions are *not properly maintained and will not work effectively* during an emergency. A fire extinguisher is not just something "the regulations require".

Fire extinguishers are a valuable asset as proved by the fact that *75 to 80 per cent of fires* which occur are *put out by a first aid fire extinguisher.*

Conversely, an extinguisher which can not be made to work because of lack of knowledge or lack of maintenance may start confusion and panic during a fire emergency. Therefore, even though operation of various types of extinguishers is sometimes apparent, it is vitally important to provide individual instruction regarding their proper use. All personnel must be able to operate fire extinguishers properly particularly during the excitement of a fire.

Successful use depends on making maximum use of fire extinguishers in the minimum amount of time.

One of the conditions of approval for first aid fire extinguishers is that full operating and maintenance instructions are prominently displayed on each appliance. These instructions are written in layman's terms and should be studied periodically by all personnel even though instructions may have been given by professional fire prevention authorities or other competent persons.

With regard to maintenance, any responsible individual is capable of inspecting, recharging or knowing when to send an extinguisher away for service by simply referring to the label on the extinguisher.

RADIOACTIVE ISOTOPE PRECAUTIONS

Many hospitals are engaged in research with radioactive materials or are using them in the treatment of disease. Since radioactive emissions cannot be seen, you must plan special precautions to keep these materials out of the fire zone.

As soon as the hospital fire alarm goes out, department personnel should place all radioactive materials in the proper storage containers specified by the Atomic Energy Control Board, Ottawa. If these containers are portable, they should be moved to a safe location — far from the fire-subject area. Once this is done, department personnel should return to the radio-activity centre to tell fire-fighters that all radioactive materials have been removed. The brigade or fire department can then function without danger from radiation.

Your entire staff should take special care to see that no radioactive material is ever involved in a fire. If isotopes volatilize and subsequently spread through the premises, the entire hospital may be contaminated, with long-term radiation damage to patients and personnel. You may even have to abandon the premises until decontamination is accomplished, or until the half-life of the isotopes has decreased to tolerable levels of radioactivity.

DISASTER PLANNING

The Department of National Health and Welfare publish two booklets, "Hospital Evacuation Planning" and "Hospital Disaster Planning" which deal with aspects of planning in case of disaster, specifically concerning hospitals. Also available is a manual on "Disaster Planning" produced by the Saskatchewan Hospital Association.

REFERENCES

Ohio Chemical and Surgical Equipment Co., 1400 E. Washington Ave.,
Madison 10, Wis., U.S.A.
Booklet — "Safety in Hospitals".

American Hospital Association, 18 East Division St., Chicago 10, Illinois, U.S.A.
Booklet — "Development of Fire Emergency Programs".

National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass., U.S.A.
Pamphlet No. 56 — "Flammable Anaesthetics Code".
Pamphlet No. 565 — "Non-flammable Medical Gas Systems".
Booklet No. 104 — "Hospital Fire Safety".

Department of National Health & Welfare, Ottawa, Ontario.
Booklet — "Hospital Evacuation Planning".
Booklet — "Hospital Disaster Planning".

PROVINCIAL REGULATIONS

Regulations under The Hospital Standards Act — Schedule "A".

Regulations Governing the Operation, Management and Use of Hospitals and Various Matters Relating Thereto.

Regulations Under the Housing and Special-care Homes Act — "Schedule, The Housing and Special-care Homes Regulations".

Regulations under The Fire Prevention Act — "Hospital Fire Regulations".

APPENDIX A:

SAMPLE MEDIA REPORT FORM

FACILITY: _____

CONTACT: _____

WHERE: LOCATION _____

WHEN: DATE _____ DISCOVERED TIME _____

TIME UNDER CONTROL _____

WHAT: TYPE OF INCIDENT: _____

WHY: DESCRIPTION _____

CAUSE (IF KNOWN) _____

ESTIMATED LOSS _____

PROBLEMS ENCOUNTERED _____

REASONS FOR FIRE SPREAD _____

DEPARTMENTS INVOLVED _____

SPECIAL APPARATUS USED _____

FIRE PROTECTION PROVIDED _____

WHO: CIVILIAN INJURIES IF ANY (NUMBER, EXTENT) _____

_____

FIREFIGHTER INJURIES IF ANY (NUMBER, EXTENT) _____

_____

COMMENTS: _____

_____

_____

SENIOR FIRE SAFETY OFFICER _____

OWNER/OPERATOR SIGNATURE _____

"No names should be released until confirmed by Police and Fire Departments"

If Fire is Not in Your Area:

1. Proceed to or stay in your normal working area and begin duties assigned specifically to you in this emergency plan.
   - Close all doors.
   - **DO NOT** cause panic by shouting or moving about excitedly.
   - **DO NOT** use the telephone or intercom system unless absolutely necessary.
   - Leave lines of communication open for the emergency co-ordinator.
   - **DO NOT USE AN ELEVATOR** unless specifically ordered to do so.

PATIENT EVACUATION/RELOCATION TECHNIQUES

Order of Removal of Patients

1. Patient(s) in immediate danger.
2. Patient(s) in rooms adjacent to fire alarm room.
3. Patient(s) in rooms immediately across the hall from the fire alarm room.
4. All other patients within the fire alarm zone.

You will have to pre-plan for each type of patient.

SUGGESTIONS FOR HANDLING INQUIRIES AND WORKING WITH THE MEDIA

By establishing rapport with media representatives and providing them with factual information, it will be possible to ensure that news releases are complete and accurate. Public information offices, if established, should be located well away from receiving and treatment areas. One staff person should be designated to work with the media, with volunteer personnel as backup, if the event is large or extends over a long period of time. All inquiries from the media should be directed to this designated person. That person should have the most current knowledge of the situation and should be well versed in the consequences of releasing such information.

The use of a media report form is recommended when dealing with the media. This form can take the place of a verbal or written statement, and allows the writer to offer the media only specific information. No information other than the media report form should be released until it has been cleared by the facility administration and legal advisors. This is especially important when a death has occurred.

APPENDIX B:

SAMPLE OF FIRE INCIDENT REPORT

1. DATE OF INCIDENT: _____ 19 _____ TIME: _____ AM/PM
2. BRIEF DESCRIPTION OF THE INCIDENT: _____

   _____

   _____

   _____
3. NAME OF PERSON WHO DISCOVERED OR OBSERVED INCIDENT:

   _____
4. NAMES OF OTHERS OBSERVING INCIDENT:

   _____

   _____

   _____
5. NUMBER OF STAFF ON DUTY AT TIME OF INCIDENT:

   ENTIRE FACILITY_____FIRE FLOOR _____
6. NUMBER OF RESIDENTS AT TIME OF INCIDENT:

   ENTIRE FACILITY_____FIRE FLOOR _____
7. DID FIRE ALARM SOUND? ☐ YES ☐ NO
8. FIRE ALARM WAS ACTIVATED BY:

   ☐ MANUAL PULL STATION ☐ FIRE DETECTOR OTHER MEANS_____
9. TIME ALARM SOUNDED: ☐ _____ A.M. ☐ _____ P.M.
10. WAS FIRE DEPARTMENT NOTIFIED? ☐ YES ☐ NO
11. FIRE DEPARTMENT NOTIFIED BY: ☐ REMOTE (Directly Connected) ALARM

    ☐ TELEPHONE ☐ OTHER_____
12. TIME OF FIRE DEPARTMENT NOTIFICATION: _____A.M._____P.M.
13. TIME OF FIRE DEPARTMENT ARRIVAL: _____A.M._____P.M.
14. WAS FACILITY EVACUATED? (Residents Only) ☐ FULL ☐ PARTIALLY ☐ NOT

15. TOTAL NUMBER OF RESIDENTS EVACUATED: _____

16. RESIDENTS EVACUATED TO:

LOCATION	NUMBER OF RESIDENTS
_____	_____
_____	_____
_____	_____
_____	_____

17. MANUAL FIRE FIGHTING EQUIPMENT USED: ☐ PORTABLE EXTINGUISHERS

☐ HOSE ☐ FIRE BLANKET ☐ OTHER MEANS _____

18. DID SPRINKLERS OPERATE (If Installed)? ☐ YES ☐ NO

19. WAS THE FIRE CONTROLLED BY:

☐ STAFF ☐ FIRE DEPARTMENT ☐ OTHERS _____

20. RESIDENTS: DEATHS _____ INJURIES _____

21. STAFF: DEATHS _____ INJURIES _____

22. OTHER: _____ DEATHS _____ INJURIES _____

23. EXTENT OF DAMAGE TO FACILITY (Brief Description):

_____

_____

_____

_____

24. CAUSE OF INCIDENT IF KNOWN: _____

_____

_____

_____

_____

25. WERE ANY OTHER INVESTIGATIONS CARRIED OUT (FIRE DEPARTMENT OR FIRE MARSHALL)? OTHER COMMENTS/NOTES:

_____

_____

_____

_____

26. PERSONS COMPLETING REPORT:

_____ _____
(PRINT) (SIGNATURE)

27. OFFICIAL SIGNATURES:

_____ _____
(ADMINISTRATOR) (SENIOR STAFF PERSON AT TIME OF INCIDENT)

APPENDIX C:

EMERGENCY LIFTS AND CARRIES

BACK CARE

The principles of body mechanics contained within the back care program are to be observed and applied appropriately in performing these emergency patient relocation techniques.

There is no one set plan for an emergency in a patient care facility.....it will depend on the type of emergency. Training, pre-planning and knowing how to handle patients in the event of an emergency will make the job much easier for you and the staff. Everyone must recognize their own capabilities and limitations. Assess the patient, match your abilities with the needs of the patient and the urgency of the situation to determine which technique to utilize.

THE UNIVERSAL CARRY

The Universal Carry is a method of removing a patient from the bed onto a sheet on the floor. It is a quick and effective method for removing a patient who is in ***immediate danger.*** *This carry can be used by anyone, regardless of the size of the patient.*

1. When you approach the bed stay low. By staying close to the floor you will not have to breathe the smoke and heated gases.
2. Now spread the sheet on the floor, place one-third of the sheet under the bed....leave about eight inches above the patient's head.
3. Place knee on bed, grasp the ankles and move legs off the bed.
4. Position yourself near the head of the bed, facing the direction you wish to move. Place knee, closest to the bed onto the bed. Place other foot slightly ahead of your body.
5. Place arm closest to patient under far shoulder.
6. Place palm of second hand against patient's other shoulder. Maintain a straight back, on the count of 1-2-3, push patient to the sitting position and transfer weight from knee on bed to leg on floor.
7. Encircle the patient around the waist with your arms, and grasp patient's opposite wrists. Remove the leg on the bed to the floor and place it slightly behind the other leg.
8. Slide the patient slowly to the edge of the bed and lower to the sheet.... allowing the patient to slide down your front leg.
9. ALWAYS PROTECT THE PATIENT'S HEAD.
10. Gently lower the head to the sheet...wrap the sheet around the patient.
11. At the patient's head, grip the sheets above each shoulder of the patient with your hands....do not let the head snap back.
12. Place the patient in a half-sitting position and pull the sheet toward you. The sheet will slide easily on the floor allowing you to move the patient to safety.

CRADLE DROP

The Cradle Drop is a patient removal that may be used with success provided that you are similar or larger in size than the patient.

1. If there is smoke or heat, stay close to the floor.
2. With the sheet on the floor, one-third of it under the bed.....
3. Position yourself in the kneeling position, close to the bed.
4. Slide one of your arms under the patient's head and grasp the opposite shoulder.
5. Position your other arm under the patient's leg at a point midway between their knees and body.
6. Pull the patient to the edge of the bed.
7. Reposition your knees eight inches from the bed.
8. Gently pull the patient toward you, rocking back into a sitting position and lowering the patient down your body to the sheet.
9. PROTECT the patient's head, by lowering this part to the sheet last.
10. Wrap the sheet around the patient.
11. Grasp the sheet above each shoulder of the patient.
12. Place the patient in a half-sitting position and pull the sheet toward you.

DOUBLE CRADLE DROP

The Double Cradle Drop is recommended for two rescuers to use on patients who cannot sit up, or where one person cannot handle the patient.

1. If there is smoke or heat stay close to the floor.
2. With the sheet on the floor...place one-third of it under the bed and leave about eight inches above the patient's head.
3. The person who will handle the top half of the patient will be referred to as "A" and the person who will handle the lower half of the patient will be "B".
4. Position yourself in the kneeling position, close to the bed.
5. "A", slide your arm under the patient's head and grasp the opposite shoulder. Your other arm goes completely under the body at the waistline.
6. "B", slide one beside "A"s arm under the body at the waistline and the other arm under the patient's thighs.
7. Reposition yourselves by moving knees back approximately 8 inches.
8. Together, gently pull the patient toward you by rocking back into a sitting position and lowering the patient down your body onto the sheet.
9. Always protect the patient's head by lowering this part to the sheet last ....wrap the sheet around the patient.

10. Together, move to the patient, grasp the sheet above the shoulders. Do not let the head snap back.
11. LEAVE THE PATIENT IN A PRONE POSITION and pull the sheet toward you.

****

The Universal Carry, The Cradle Drop and Double Cradle Drop are designed so that you are always lowering the patient, therefore, you do not require great strength.

MATTRESS SLIDE

1. Remove pillows.
2. Standing at foot end of bed, raise corner of mattress closest to your body.
3. Place foot nearest the bed onto the bed deck, and grasp both corners of mattress end.
4. Pull mattress at an angle with a corner being off the bed deck.
5. Move to patient's side protecting him from sliding off the mattress.
6. Loosen lower sheet and wrap securely around the patient.
7. Grasp the sheet under patient's chin area and with the other hand, grasp sheet near patient's lower abdomen.
8. Pull the patient down the incline of the mattress, using your body to protect the patient from falling off the side.
9. Lower the patient's head to the floor.
10. Grasp sheet at patient's shoulders and pull the sheet toward you - to safety.

VERTICAL EVACUATION/RELOCATION

If Vertical Evacuation/Relocation is necessary by going down either interior stairways or outside fire escapes...in many cases, a helpless patient may be taken downstairs by one person.

1. With the patient wrapped in a sheet, drag him head first to the top of the stairs.
2. It is most important that the sheet be wrapped tightly to protect the patient. It will make the descent easier.
3. You take a position on the stairs....one, two or three steps lower than the patient. This position will vary depending on the height of the patient and yourself.
4. Place your arms under his armpits and join hands in front of him.
5. Back slowly down the stairs and maintain close contact at all times with one of your legs against the patient's back.
6. The patient's lower body will be on an incline with the stairs. In this position, it is easy to move the patient.

THE SWING CARRY

The Swing Carry is the best method for two trained people to move a patient. No blanket is needed. If the patient is lying in bed, there are different actions to know which are dependent upon the position you take....to clarify this, the upper part of the body will be "A" and the lower part "B".

1. "A" 1.1 Place knee on bed, grasp the ankles and move legs off the bed.

   1.2 Position yourself near the head of the bedside, facing the direction you wish to move, above the patient's shoulders. Place knee, closest to the bed onto the bed. Place other foot slightly ahead of your body.

   1.3 Place arm closest to patient under far shoulder.

   1.4 Place palm of second hand against patient's other shoulder. Maintain a straight back, on the count of 1-2-3 push patient to the sitting position and transfer weight from knee on bed to leg on floor.

2. "B", after the patient is sitting up, continue to move the legs out until they are at a right angle to the bed.
3. Now together, sit on the bed, take the patient's arm and place it over your shoulder.
4. Join arms in back of the patient.....do not hold onto the patient, just each other.
5. Place your shoulder under the patient's armpit.
6. Join your hands together under the patient's knees.
7. Together, lift the patient and walk forward in a normal manner.....the patient may be lowered feet first, when an area of safety is reached.
8. Remember, always protect the head.

THE EXTREMITY CARRY

If someone has a cast on the lower part of his body, the Extremity Carry can be used on most patients, provided that they are able to be placed in a sitting position....again, two trained persons may employ this method with success. Each person has special moves to complete, so we shall refer to the upper body as "A" and the lower "B".

1. "A" 1.1 Place knee on bed, grasp the ankles and move legs off the bed.

   1.2 Position yourself near the head of the bedside, facing the direction you wish to move, above the patient's shoulders. Place knee, closest to the bed onto the bed. Place other foot slightly ahead of your body.

   1.3 Place arm closest to patient under far shoulder.

   1.4 Place palm of second hand against patient's other shoulder. Maintain a straight back, on the count of 1-2-3 push patient to the sitting position and transfer weight from knee on bed to leg on floor.

2. "B", you take the patient's ankles and move the legs until one of the legs is clear of the bed. If moved further, it will be difficult for your partner to get his hold on the patient.
3. "B", you simply back in between the patient's legs, far enough to grasp the ankles....place your hands to the outside of the legs, allowing your thumbs to stay on top.
4. "A", you move to the rear of the patient, encircle him with your arms.... place your arms underneath his armpits and lock together in front.
5. Slide the patient to the edge of the bed. "A", maintain close contact with the patient and when in position, give the signal to move out.
6. Carry the patient to safety walking forward in a normal way.
7. "B".....it is most important that you keep your arms straight down when carrying the patient.

THE CHAIR LIFT

Emotionally disturbed patients who are not ambulatory present a special relocation problem.....the Chair Lift is a method that requires a straight-back chair, and one or two rescurers.

1. With the patient in a chair and the absence of restraining straps, use a bed sheet to anchor the patient to the chair.
2. The bed sheet encircles the patient about chest high and you tie it in the back of the chair. The knot is simple, similar to the one used in starting to tie your shoe-lace.
3. Now tuck the loose end of the sheet between the patient's body and the sheet around him.
4. For two trained people....."A", you face the chair in the rear of the patient.
5. "B", you take a position in front of the chair, facing the patient.
6. "A", put your foot against the leg of the chair and tilt toward you.
7. "B", you stoop down and grasp each side of the front legs.
8. Together, lift the chair and walk.
9. IF YOU ARE ALONE....tilt the chair toward you and back out.

SIDE ASSIST HOLD

Many people in patient care facilities are medically classified as able to walk. Unfortunately, this description of a patient's condition is not true in an emergency situation....for instance, an elderly person may be able to walk at a very slow shuffle...but in an emergency, this type of patient will need assistance to be moved quickly.

1. In the side assist hold, you approach the standing patient from the side....take the patient's arm and place it in back of you.
2. Pull the patient's arm with your hand that is opposite the patient, until his body is tight against you....you hold his arm securely at all times.
3. You encircle the patient's body with your other arm and take his fore-arm....the patient will feel secure in your grasp and may be controlled very easily....the patient cannot fall forward or backward.

BEAR-HUG HOLD

If the exit path is narrow, or the patient is disturbed emotionally, it may be to your advantage to use the Bear-Hug assist on the patient.

1. Approach the standing patient from the rear.
2. Place your hands between the patient's body and arms....take hold of the wrists....keep your hands on top, your thumbs to the inside.
3. Fold your arms to encircle the patient around the chest.
4. Your arms will now be in the bear-hug position.
5. MOST IMPORTANT is that you keep your head to one side of the patient's head.

INFANT AND CHILDREN REMOVAL

For removal of infants, the following procedure is recommended.

1. With a sheet on the floor.....place two babies in each bassinet, using diapers or small blankets for padding.
2. Fold the sheet over one end...fold the corners in...then roll the sides in to form a pocket.
3. Together, grasp the corners of the sheet and pull the babies to safety.
4. Two people can drag eight babies to safety.
5. If necessary, one person can do the job.

CHILDREN IN CRIBS

If an emergency where you have children in cribs and it becomes necessary to relocate them...place as many children as possible in one crib, and move them to safety.

FIRE SAFETY PLAN CONTENTS

1. A copy of the fire safety programs should be established during the design stage.
2. Layouts of each floor (reduced to fit Manual) with the fire protection features indicated.
3. A copy of the fire safety regulations applicable.
4. A statement of the fire safety policies.
5. The admission policies with respect to fire safety.
6. Diagrams showing lines of responsibility and designated personnel.
7. Required staff action in a fire.
8. Evacuation/relocation procedures from the fire floor and from the building.
9. Relocation procedures for residents.
10. Training procedures for staff including fire drill procedures.
11. Training procedures for residents including self-evacuation procedures.
12. Maintenance procedures for fire protection equipment.
13. Fire incident reporting procedures.
14. Fire prevention procedures.
15. False alarm procedures.

DETAILED INSTRUCTIONS FOR STAFF IN EVENT OF FIRE

The instructions for staff contained in this appendix should be modified to meet the specific needs of each facility. Any such modifications should be discussed with the fire department prior to implementation.

INSTRUCTIONS FOR THE DISCOVERER OF A FIRE

Staff members should be trained to carry out the following sequence of actions if they discover a fire.

1. Remove residents in immediate danger from the room containing the fire.
2. Close the door of the room containing the fire.
3. Activiate the nearest fire alarm. (Phone fire department).
4. Move affected residents to a location away from the fire.
5. Notify the person in charge of the fire floor of the exact location of the fire and its approximate size, if possible.
6. Notify other staff and residents on the fire floor.

The order of Steps 1, 2, 3 will be dictated by each individual situation and are not necessarily in a specific order although it is extremely important that these steps take place.

The purpose of such instruction is to rescue residents in immediate danger, contain the fire and alert others. In certain circumstances, it may be appropriate for the person discovering the fire to attempt extinguishment, but only if trained to do so. This should be attempted only if the fire is very small and confined, such as in a wastepaper basket.

INSTRUCTIONS FOR THE PERSON IN CHARGE OF THE FIRE FLOOR

The person in charge on the fire floor should be instructed to take the following actions.

1. Take whatever measure is appropriate to cope with the immediate emergency, including the issuing of instructions.
2. Advise administrative staff of the fire location.
3. Assess the situation and order evacuation of the fire floor if necessary.

During the evening and night shifts, when fewer staff members are available, the person in charge on the fire floor should assist in procedures noted for other staff, provided this does not unduly interfere with directing operations on the fire floor.

INSTRUCTIONS FOR THE PERSON IN CHARGE OF THE FACILITY

The person in charge of the facility should be instructed to take the following actions.

1. Call the fire department (if there is no communications centre, or if it is not staffed).
2. Call the communications centre (if one is available) to establish exact location of fire.
3. Proceed to the fire floor, assess the situation in conjunction with staff on that floor and issue instructions for appropriate action.

INSTRUCTIONS FOR STAFF ON THE FIRE FLOOR

Other staff on the fire floor should be trained to carry out the following sequence of actions.

1. Activate the fire alarm if this has not already been done.
2. Move residents and visitors who are in the hallway into a safe area away from the fire (e.g. to an adjacent zone).
3. Close fire and smoke doors, including residents' room doors (if not already closed).
4. Attempt extinguishment of the fire only if trained to do so and if it is small.
5. Remove from halls or corridors anything which might obstruct evacuation or the movement of fire fighters (e.g. mobile equipment and wheelchairs) and locate in an unoccupied room.
6. Report to the person in charge on the fire floor for further instructions.
7. Assist in evacuation procedures if the person in charge on the fire floor gives instructions to evacuate.

INSTRUCTIONS FOR CARE STAFF ON OTHER FLOORS

Those care staff who are not on the fire floor should be instructed to undertake the following sequence of actions.

1. Remain on their own floor until otherwise instructed.
2. Close room doors on their floor.
3. Prepare residents and visitors for evacuation.
4. Close fire doors and stair doors.
5. Remove obstables from corridor.
6. Report to the person in charge of the floor for further instructions.
7. Proceed to the fire floor only if instructed by person in charge of their floor.
8. On the fire floor, report to the person in charge for instructions.

INSTRUCTIONS FOR ENGINEERS, MAINTENANCE AND SECURITY STAFF

Non-care staff not on the fire floor should be instructed to take the following actions.

1. Determine the location of the fire either from the annunciator panel, the switchboard operator, the administrator or from PA announcements.
2. Carry out predetermined shut-down procedures on equipment as necessary to reduce the danger of fire or smoke spread.
3. Meet fire department (if this is the assigned role).
4. Report to the person in charge on fire floor.